

REMARKS

Claims 1-24 are pending in the present application.

The Examiner has objected to the drawings. Specifically, FIG. 1 erroneously references "main memory 40" and should reference "system memory 40." The Applicant has corrected the drawings to overcome the examiner's objections. A replacement drawing sheet, which replaces drawing sheet 1, is attached herewith.

Claims 1-3, 7, 8, 17-19, and 23-24 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Ruszczyk (U.S. Patent No. 6,205,150) (hereinafter 'Ruszczyk') in view of Lu (U.S. Patent No. 6,584,102) (hereinafter 'Lu') and in further view of Huang et al. (U.S. Patent No. 6,092,137) (hereinafter 'Huang'). The Applicant respectfully traverses these rejections.

Claims 4 and 20 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Ruszczyk and Lu and in further view of Cidon et al. (U.S. Patent No. 6,269,330) (hereinafter 'Cidon'). The Applicant respectfully traverses these rejections.

Claims 5, 6, 9-16 and 21-22 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Ruszczyk, Lu and Cidon in further view of Drott et al. (U.S. Patent No. 6,343,067) (hereinafter 'Drott'). The Applicant respectfully traverses these rejections.

The Applicant discloses at page 8, lines 1-7

"During operation, packet I/O bus device 50A and 50B may translate PCI bus transactions into upstream packet transactions that travel in I/O streams and additionally may translate downstream packet transactions into PCI bus transactions. All packets originating at nodes other than host node interface 30 may flow upstream to host node interface 30. All packets originating at host node interface 30 may flow downstream to other nodes such as packet I/O bus device 50A and 50B. As used herein,

“upstream” refers to packet traffic flow in the direction of host node interface 30 and “downstream” refers to packet traffic flow in the direction away from host node interface 30. Each I/O stream may be identified by an identifier called a Unit ID. It is contemplated that the Unit ID may be part of a packet header or it may be some other designated number of bits in a packet or packets. As used herein, “I/O stream” refers to all packet transactions that contain the same Unit ID and therefore originate from the same node.” (Emphasis added)

The Applicant further discloses at page 10, lines 8-15

“During operation, a packet transaction may enter upstream router 100. Upstream router 100 may identify the packet by the packet’s Unit ID, which may be a five-bit identifier field. Upstream router 100 may assign this packet and all other packets with this same Unit ID to the first available buffer, such as upstream I/O buffer 125A. As each succeeding packet enters upstream router 100 it is examined and assigned to an appropriate buffer. Hence, all packets with the same Unit ID may be stored in the same buffer. Each upstream reorder logic circuit 150A-D may then analyze only those packets contained in the particular buffer that each receives packets from.”

Accordingly, the Applicant’s claim 1 recites an apparatus comprising, in pertinent part,

“a plurality of upstream buffers each configured to store a plurality of upstream packets, wherein each of said plurality of upstream packets contains an associated identifier indicative of a source of each of said plurality of upstream packets; and ...
wherein said router is configured to route each of said plurality of packets to a given one of said upstream buffers, depending upon the associated identifier.”

Ruszczyk is directed toward a method of scheduling higher and lower priority data packets, wherein at col. 3, lines 50-64 Ruszczyk discloses

“The method includes a first network device monitoring a first queue with multiple data packets of varying priorities and determining scheduling priorities or transmission deadlines for data packets in the first queue. The multiple data packets provide various class-of-service and quality-of-service connections. After a first network device determines the priority of the data packets, the first network device inserts higher priority data packets into a second queue and lower priority data packets into a third queue. The data packets in the second queue are scheduled for transmission using a first scheduling method as higher priority data

packets. The data packets in the third queue are scheduled by a second scheduling method with transmission deadlines as lower priority data packets to be executed after the higher priority data packets." (Emphasis added)

From the foregoing, it appears that Ruszczyk teaches placing the incoming packets into different queues based upon their respective priorities. Thus, the teachings of Ruszczyk do not appear to be relevant to the invention as recited in claim 1. To the contrary, as recited in claim 1, packets are placed into respective buffers based upon an identifier that is indicative of the packet's source, not any priority information as taught in Ruszczyk.

The Examiner acknowledges "Ruszczyk **does not teach** that the packets are routed to a given one of the upstream buffers based on the associated identifier that is indicative of the source of the packet."

However, the Examiner asserts "Lu teaches a system in which priorities are assigned to communication signals based on the source of the signal, and therefore the priority is indicative of the source." The Examiner further asserts "one of ordinary skill in the art at the time of the invention was made would combine the device of Ruszczyk with the system of Lu, resulting in the inventions of claims 1-3, 7, 8, 17-19, and 23-24 in order to allow each source fair and efficient access to the router by assigning separate priorities, based on the bandwidth requirement of the source, to each source connected to the router."

It appears that the Examiner is asserting that assigning priorities to signals based upon the source of the signal is analogous to storing packets in buffers based on an identifier indicative of the source of the packet. The Applicant respectfully disagrees with the Examiner's characterization of Lu and finds the characterization to be faulty.

Specifically, Lu teaches at col. 20 lines 34-44

"The buffer queue manager 910 may **manage** communication signal data corresponding to the received communication signals according to any

number of buffer management schemes such as based on a priority of the communication signals. The priority scheme may assign priorities to the received communication signals based on various factors including the source of the communication signals, processing load, and the like. Once communication signal data is determined to be next in the queue by the buffer queue manager 910, the controller 904 performs processing..." (Emphasis added)

The Applicant finds no relevance of the teaching of Lu to the Applicant's invention. More particularly, it appears Lu merely teaches assigning of priorities of signals in a queue based on communication signal source and managing those signals using a priority scheme. It is clear to the Applicant that Lu does not teach "a plurality of upstream buffers each configured to store a plurality of upstream packets, wherein each of said plurality of upstream packets contains an associated identifier indicative of a source of each of said plurality of upstream packets" or "router is configured to route each of said plurality of packets to a given one of said upstream buffers, depending upon the associated identifier..." as recited in the Applicant's claim 1.

Huang is directed to a fair data bus arbitration system which assigns adjustable priority values to competing sources, wherein Huang teaches at col. 2, lines 27-32

"The arbitration protocol of the present invention controls access to a shared data bus in a manner which ensures that the bus is utilized efficiently and that each competing source has a fair opportunity to access the bus. This is achieved by assigning each competing source an adjustable priority weighting value (PWV) which is initially set to a value which reflects the bandwidth requirements of the competing source (CS_i). During arbitration, the competing source with the lowest PWV is granted access to the bus."

It appears that Huang teaches an arbitration protocol which uses priorities that are assigned to each source. Thus, it is clear to the Applicant that Huang does not teach "a plurality of upstream buffers each configured to store a plurality of upstream packets, wherein each of said plurality of upstream packets contains an associated identifier indicative of a source of each of said plurality of upstream packets" or "router is configured to route each of said plurality of packets to a given one of said upstream

buffers, depending upon the associated identifier...” as recited in the Applicant’s claim 1.

Cidon is directed to fault location and performance testing of communication networks. The Applicant finds no reference, in Cidon, to “wherein each of said plurality of upstream packets contains an associated identifier indicative of a source of each of said plurality of upstream packets” or “wherein said router is configured to route each of said plurality of packets to a given one of said upstream buffers, depending upon the associated identifier” as recited in the Applicant’s claim 1.

Drottar is directed to a method and apparatus for failure and recovery in a computer network. The Applicant finds no reference, in Drottar, to “wherein each of said plurality of upstream packets contains an associated identifier indicative of a source of each of said plurality of upstream packets” or “wherein said router is configured to route each of said plurality of packets to a given one of said upstream buffers, depending upon the associated identifier” as recited in the Applicant’s claim 1.

The Applicant noted that even if, arguendo, one were to combine Ruszczyk with Lu or Huang, one would not obtain the invention recited in the Applicant’s claim 1.

Thus, neither Ruszczyk, Lu nor Huang, taken singly or in combination, teach or suggest the combination of features recited in the applicant’s claim 1. Accordingly, the Applicant submits that claim 1, along with its dependent claims, patentably distinguishes over Ruszczyk in view of Lu and Huang, over Ruszczyk and Lu and in view of Cidon, and over Ruszczyk and Lu in view of Cidon and in further view of Drottar for the reasons given above.

Likewise, claims 9 and 17 recite features similar to claim 1. Thus, claims 9 and 17, along with their respective dependent claims, are believed to patentably distinguish over Ruszczyk in view of Lu and Huang, over Ruszczyk and Lu and in view of Cidon, and over Ruszczyk and Lu in view of Cidon and in further view of Drottar for at least the

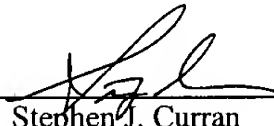
reasons given above.

CONCLUSION

Applicant submits the application is in condition for allowance, and an early notice to that effect is requested.

If any fees are due, the Commissioner is authorized to charge said fees to Meyertons, Hood, Kivlin, Kowert, & Goetzel, P.C. Deposit Account No. 501505/5500-66800/BNK.

Respectfully submitted,



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